

Japan International Cooperation Agency (JICA)

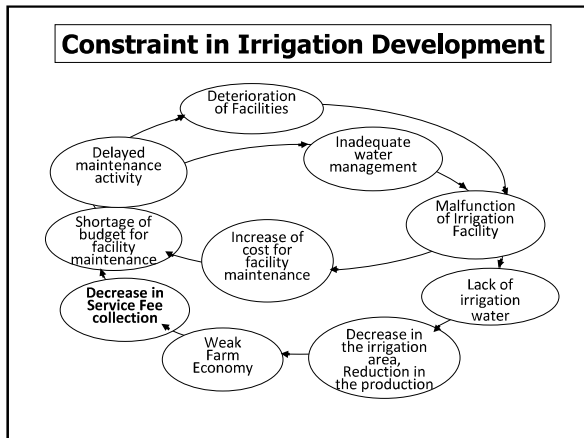
**THE SURVEY ON  
AGRICULTURAL INFORMATION  
SUPPORT SYSTEM  
WITH THE USE OF ICT**  
(Information and Communication Technology)

Presentation on  
**IRRIGATION SUB-SECTOR**

30 January 2012  
JICA ICT SURVEY TEAM

**IRRIGATION IN THE PHILIPPINES**

- ★ Long history as compared to other Asian countries
  - From the time of Spanish Era (Zanjera system)
- ★ After Local Government Code (1991), Irrigation systems are divided to two categories.
  - National Irrigation System (NIS) ...under NIA
  - Communal Irrigation System (CIS) ...under LGU
- ★ Irrigation area occupies 5% of land area nationwide.
  - NIS : 50%
  - CIS : 36%
  - Private : 14%
- ★ It has contributed enhancement of rice plantation in two crops in the country.



**Irrigation Service Fee (ISF)**

- ★ Irrigation Service Fee (ISF) is the charge to be paid by farmers to NIA, based on the area irrigated and planted.
- ★ NIA has legal basis to collect ISF by Republic Act No. 3601.
  - ISF is fixed as follows:  
3-sacks on dry season, 2-sacks on wet season (ha)
  - Collected ISF is remitted to the Central Office of NIA as financial sources of operation and maintenance of NIS (not to be exclusively used in the Irrigation Systems wherein ISF is collected)

**Collection Efficiency of Irrigation Service Fee (ISF-CE)**

- ★ Nationwide Average : ISF-CE = 55%
  - Collection is made by NIA, and/or Irrigator's Association by themselves (under Irrigation Management Transfer (IMI) Program)
- ★ Stagnation of Collection Efficiency directly leads to the shortage of budget for operation/management

**CHALLENGES AFFECTING LOW ISF COLLECTION**

- a) Accuracy of the declared irrigation service area and firmed-up service area  
(ex. no update of the area using geodetic ground survey)
- b) Accuracy of the declared List of Irrigated and Planted Area (LIPA)  
(ex. no exact technical basis for land area measurement)
- c) Transparency in Irrigation Service Fee Collection  
(ex. collusion between collector and farmers)
- d) Conveniences in ISF Collection/Remittances  
(ex. spending extra effort for travel, fuel, time for an additional expenses)
- e) Economic sustainability of farming in irrigated paddy rice production  
(ex. farmer's less financial capacity after experiencing farming failure)
- f) Efficiency in irrigation delivery and utilization  
(ex. no virtual technical basis for water scarcity)

### Possible Application of ICT for the improvement of ISF-CE



#### (1) ISF Payment by using Mobile Phone

- Preliminary Field Survey in Porac-Gumain NIS and UPRIS, the followings were found out:
  - 1) 57% of farmers pay ISF at their homes, while 43% of farmers go out to pay ISF (at Association office, NIA office) .
  - 2) Among 43% of farmers above, 14% are paying more than 50 Pesos for transportation to pay ISF.
- Utilization of money transfer system for ISF payment may enhance ISF-CE
- Payment system can be also used to other purposes (sending money to children, etc.)

### Possible Application of ICT for the improvement of ISF-CE



- Users can receive various information through SMS, as incentives to use this system
  - a) Water management advices at Turn-out level
  - b) Advices on cropping schedule
  - c) Warning on agriculture pest & diseases
  - d) Weather forecast
  - e) Info on meeting time and place of IA assembly
  - f) Advance ISF bill (notification of amount)
  - g) Warning on damaged irrigation facilities
  - h) Social Inter-action within and outside IA Members

### Possible Application of ICT on the improvement of ISF-CE



#### ★ Advantage (expected effect of this new method):

- Enhance ISF payment (motivation to pay, minimize time and expenses such as transportation)
- Promote sense of budget management
- Payment record management
- Convenience in commerce transaction
- Elimination in manipulation or human intervention of data/records

#### ★ Issues and concerns to be considered for implementation:

- ICT literacy (especially for elder generation)
- Communication charges
- Not all farmers have own cell phone/ mobile phone
- Not all Irrigation Systems are located in the coverage area of commercial cell phone signal

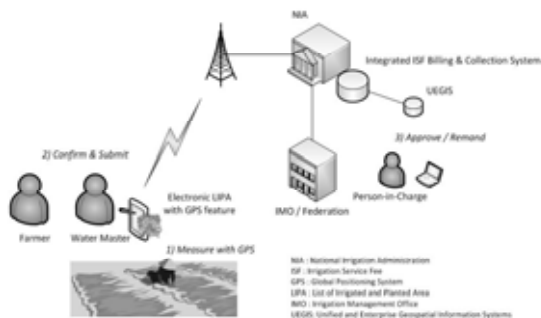
### Possible Application of ICT on the improvement of ISF-CE



#### (2) Speedy issuance of ISF bill by the confirmation of planted and irrigated area using GPS

- Step 1, Day1, At TSAG rice field area, Collector will read the Coordinates (Longitude, Latitude) of the irrigated & planted area boundary loop.
- Step 2, Day1, Send Coordinates thru Cell Phone, Computer Download , or Manual Encode at the Billing Center,
- Step 3, Day1, Billing Center automatically calculate the Irrigated & planted area,
- Step 4, Day1, Billing Center prepares for the Paper Bill for the every farmer,
- Step 5, Day2, NIA deliver Paper Bill to IA/TSAG

### Improving List of Irrigated and Planted Area



Thank you.....



**Project Formulation Workshop on  
ICT Application in Agriculture**

**Agricultural Insurance**

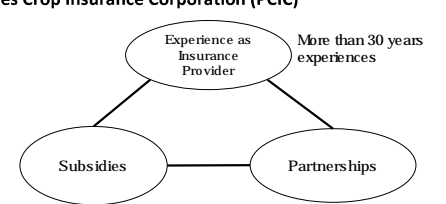
Seminar Room, NAPL, BPI Compound  
Dilliman, Quezon City  
30 January 2012

## Agenda

1. Current Situation
2. Index Based Insurance Product
3. What's necessary for further development?
4. What can JICA do?
5. Basic Concept of Future Projects

### 1. Current Situation of Crop Insurance (1)

**Philippines Crop Insurance Corporation (PCIC)**



Experience as Insurance Provider: More than 30 years experiences

Subsidies

Partnerships

	Share of total premium
Farmers	26%
LI	19%
Govt	55%
Total	100%

Banks, MFIs, NGOs, etc.  
Government Institutions  
International Donors

\*Rice Crop Insurance: Multi Risk Cover

### 1. Current Situation of Crop Insurance (2)

Low Penetration Rate

High Operation Cost

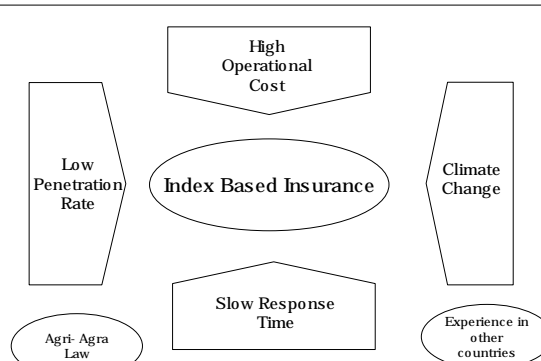
Slow Response time for Claim

Percentage of Insured Area in 2010

	Total harvested area (Ha)	No. of Insured area (Ha)	% of insured area
Rice	3,008,325	142,403	4.7%
Com	2,499,040	9,696	0.4%
Rice & Com	5,507,365	152,100	2.8%

\*Philippines Bureau of Agricultural Statistics

### 1. Current Situation of Crop Insurance (3)



High Operational Cost

Low Penetration Rate

Index Based Insurance

Climate Change

Slow Response Time

Experience in other countries

Agri- Agra Law

### 2. Index Based Insurance Products

**Weather Index Based Insurance (WIBI): PCIC- ILO**

Payout is based on weather indices and not on the actual damages suffered by the crops

**Area Based Yield Insurance (ARBY): PCIC- GIZ**

Based on the average yield of a region  
Payout is given when measured yield for that region is under predefined limit

**Weather Index Based Insurance: PCIC- WB/ PhilCCAP**

The project has just started since last year. The Pilot testing will be implemented in Region 2 and 6.

3. Weather Index Based Insurance (WIBI) (1)	
Under the Climate Change Adaptation Project (CCAP), implemented by the ILO	
Target Area	Buenvista and Remedios T. Romualdez municipalities in Agusan del Norte
Premium & Trigger	<ul style="list-style-type: none"> <li>Rice and corn- against low and excess rainfall</li> <li>Premium: 3.04% for rice, 6.18% for corn</li> </ul>
Development Process	<ul style="list-style-type: none"> <li>Partnerships: DA, PAGASA, Municipal Agricultural Office, PhilRice, Financial Service Providers</li> <li>Data Source: 30 years historical data, climate scenarios and projections, crop yield data from DA, MAO farmers, crop water requirement from DA and PhilRice</li> </ul>
Result of the pilot stage	<ul style="list-style-type: none"> <li>145 rice farmers enrolled</li> <li>165 hectares</li> <li>Insurance coverage: Php 4.09M</li> <li>56 farmers received</li> </ul>

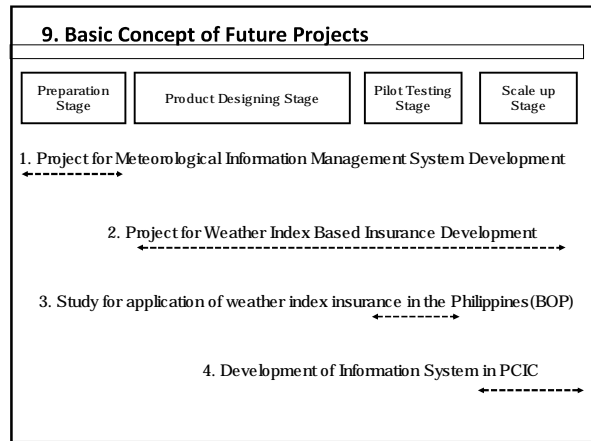
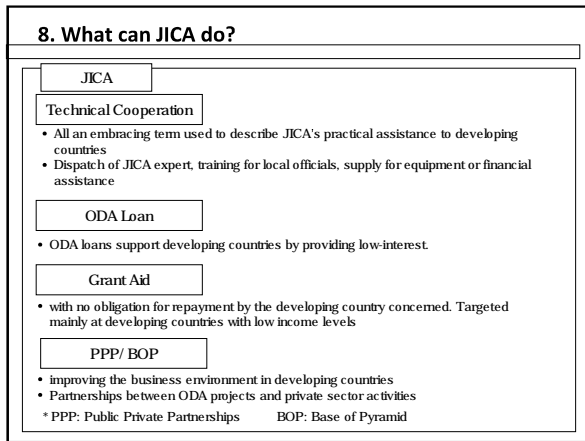
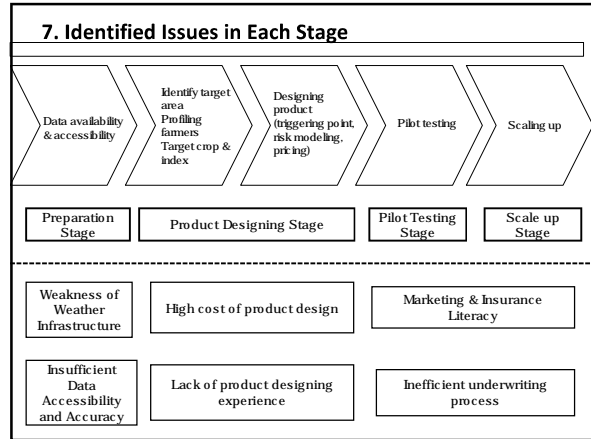
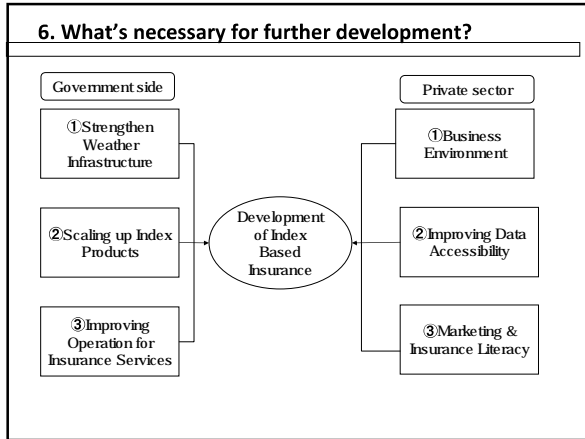
3. Weather Index Based Insurance (WIBI) (2)	
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">POTENTIALS</div> <ul style="list-style-type: none"> <li>● Low Operation Cost</li> <li>● Fast Payouts</li> <li>- No field assessment</li> <li>- Payout automatic upon breach of index</li> </ul>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">CHALLENGES</div> <ul style="list-style-type: none"> <li>● Limited number of weather stations</li> <li>● Starting up Cost</li> <li>● Weather Data</li> <li>● Scaling up</li> <li>● WIBI literacy</li> </ul>

4. Area Based Yield Insurance (ARBY) (1)	
Under the MIPSS and EFOS implemented by GIZ	
Target Area	Three NIS in Leyte (BAO, Maint Pongso, and Hindang Hilongos)
Premium & Trigger	<ul style="list-style-type: none"> <li>Average Yield: 78.03- 79.33 (ca/ha)</li> <li>Coverage level: 80% , Premium: 3.5%- 4%</li> </ul>
Implementation Process	<ul style="list-style-type: none"> <li>PCIC: Main insurer, Marketing and Enrolment,</li> <li>MFIs (OCCCI): Marketing and Enrolment, Premium Collection</li> <li>IAS: advocacy, gross roots promotion</li> </ul>
Result of the pilot stage	<ul style="list-style-type: none"> <li>Total farmers: 129 farmers</li> <li>Total 174.3ha</li> <li>34 farmers were paid a total of Php 48,000</li> </ul>

4. Area Based Yield Insurance (ARBY) (2)	
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Lessons Learned</div> <ul style="list-style-type: none"> <li>● Necessary to encourage paradigm shift for insurance providers and farmers to move toward index based insurance</li> <li>● Including other factors of agriculture such as certified seeds, irrigation, technical support, and credit</li> <li>● Accurate Yield Data</li> <li>● Accessibility of historical yield data</li> <li>● Enhancing the index continually</li> </ul>	

5. Activities of Private Sector on Index Based Insurance			
	CLIMBS	Micro Ensure	Malayan Insurance
Product	Weather Protect Product	Typhoon and Drought Index Insurance	Typhoon and Drought Index Insurance
Target	Cooperatives Portfolio	Farmers Rice	Farmers Rice
Trigger	Either rainfall or wind speed	Rainfall and distance from typhoon	Rainfall and distance from typhoon
Data Source	<ul style="list-style-type: none"> <li>Rainfall- TRMM</li> <li>Wind speed- RSMC</li> <li>DHI</li> </ul>	<ul style="list-style-type: none"> <li>Rainfall- PAGASA</li> <li>Typhoon distance- JMA</li> </ul>	<ul style="list-style-type: none"> <li>Rainfall- PAGASA</li> <li>Typhoon distance- JMA</li> </ul>
Current Stage	-	Developing new index based products	Only for pilot stage, but still interested in index based insurance
Others	GIZ- Munich Re (PPP)	-	-

5. Activities of Private Sector on Index Based Insurance	
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Major Challenges</div> <ul style="list-style-type: none"> <li>● Lack of farmers' understanding</li> <li>● Farmers' awareness of insurance</li> <li>● Basis risk</li> <li>● Reputational Risk</li> <li>● Distribution channel</li> <li>● No real time weather information</li> <li>● Historical data availability</li> </ul>	



### 1. Project for Meteorological Information Management System Development

■ **Current Issues: Weakness of Weather Infrastructure**  
Insufficient Data Accessibility and Accuracy

Transaction of weather information has been increasing  
- installing AWS in mobile cell sites

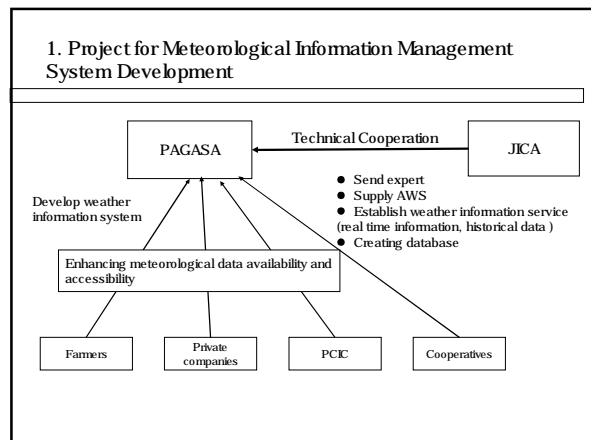
Publicity of weather information is still very limited  
- no real time information, no web service

This will contribute for enhancing accessibility of meteorological data from private sector and also establishment of disaster risk management

■ This project is possibly to combine with development of index based insurance project.

■ **Area of Activities**

- Identify strategic locations of Automatic Weather Stations
- Establish real time weather information service
- Improve weather data accessibility from private companies and farmers



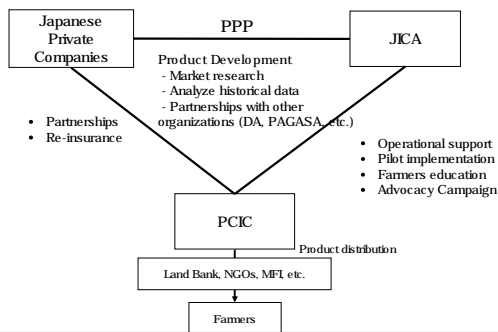
## 2. Project for Weather Index Based Insurance Development

- Current Issues: High cost of product design  
Marketing & Insurance Literacy
- Project Purpose: Lack of product designing experience  
Developing index based insurance product.
- There are two ways of scaling up:
  - 1) Developing index based insurance for new target area  
- Palawan
  - 2) Developing index based insurance for new target crops  
- Banana, sugarcane
- The project includes product designing and pilot implementation stage.
- product development team will be formulated from a wide range of stakeholders (PCIC, JICA, PAGASA, insurance consultants, DA, etc.)

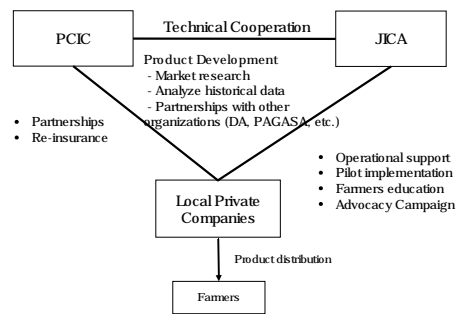
## 2. Project for Weather Index Based Insurance Development

- Japanese Private Companies**
  - Play a role of re-insurer
  - Easy to take a risk since involvement in product development process
- JICA**
  - Provide technical assistance
  - Support more marketing aspects and farmers' education
  - Facilitate institutional arrangement
- PCIC**
  - Experiences in index based insurance
  - Collaboration with their distribution line
  - Facilities and human resources
- Local Private Companies**
  - Collaborate with governmental organizations and international agencies
  - Strengthen distribution side

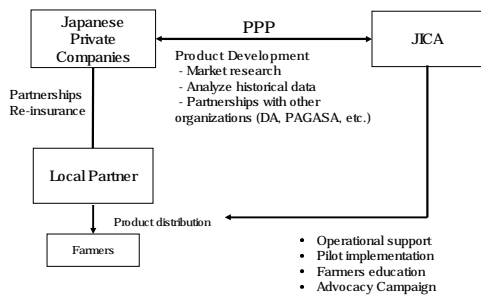
## 2. Project for Weather Index Based Insurance development (PPP) (1)



## 2. Project for Weather Index Based Insurance development (PPP) (2)



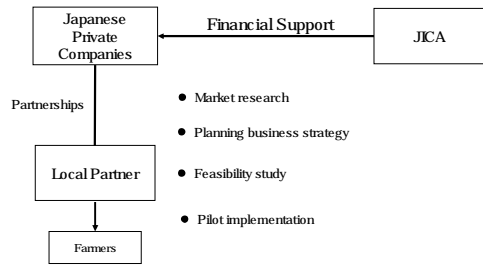
## 2. Project for Weather Index Based Insurance development (3)



## 3. Study for application of weather index insurance in the Philippines (BOP)

- Current Issues: High cost of product design
  - Project Purpose: Identifying feasibility of new index based products
  - JICA**
    - Financial support for research by private companies
    - No physical, technical support
  - Private companies**
    - Try out new products
- Local private companies must collaborate with Japanese entities.  
Products must be beneficial for local poor people.

### 3. Study for application of weather index insurance in the Philippines (BOP)



### 4. Development of Information System in PCIC

- Current Issues: Inefficient underwriting process
  - Low insurance literacy among farmers
  - Farmers education is necessary, especially for index based insurance
  - Slow response time for claim settlement
- Outline
  - Using portable/handheld electronic-based guide to facilitate a more efficient implementation of the traditional mode of insurance claims adjustments and pay out
  - The main goal of this project is to develop a system to dramatically shorten the adjustment pay out time of insurance claims
  - This project will contribute not only to procedure of traditional comp, but also to operation of index based insurance
  - The system and portable devices will be able to utilize for farmers education to enhance their insurance literacy

**Thank you!**

**Attachment-5 Minutes of Meeting on the Project  
Formulation Workshop**



**MINUTES OF THE MEETING**

Project Formulation Workshop

January 30, 2012

NPAL Building, BPI Compound, Department of Agriculture, Quezon City

**PARTICIPANTS**

Mr. Ryutaro Kobayashi	JICA
Ms. Teresita C. Palma	ITO II, DA-ITCAF
Ms. Eva Dominguez	ITO I, DA-ITCAF
Mr. Rodrigo Labuguen	ITO III, DA-BAS
Ms. Nova Concepcion	Manager, Community Partnerships, Smart Communications
Ms. Memey Mendoza	Sr. Mgr., Livelihood & Community Building, Smart Communications
Ms. Juliet Manggera	Chief, ISRIS BSWM
Mr. Dante Margate	GIS Staff, BSWM
Mr. Bonifacio Labiano	Division Manager, IEC, NIA
Mr. Leandro Gazmin	Director, AMAS
Ms. Nemelita Sungcala	DC, AMAS
Ms. Leny Pecson	EA III, AMAS
Ms. Thelma Cinco	AWSC, PAGASA
Mr. Arnel Mandos	WFS III, PAGASA
Ms. Pamela Mappala	MPS III, DA-ATI
Mr. Wilbur Dee	PM, DENR
Mr. Roy Miclat	Life Division Manager, CLIMBS
Mr. Del Bellen	Reg. Marketing Manager, CLIMBS
Ms. Mabel Perez	PDO, LBP
Mr. Jovino de Dios	Sup. SRS, PhilRice
Mr. William Martirez	Micro Ensure
Ms. Teresa Santos	Planning Division Chief, ACPC
Mr. Norman Cajucom	Acting SVP, PCIC
Mr. Kurt Austria	Project Coordinator, PhilCCAP
Mr. Edilberto Chavez	IT Officer I, NIA
Mr. Julius Cabauatan	Info. Systems Dev't. Chief, NIA
Ms. Edita Ragodon	Manager, MID-NIA
Ms. Aleli Maghirang	PDO III, PDS-DA
Mr. Carlo Diaz	Gen. Manager, BAC-Malayan
Mr. Akira Sudo	Team Leader, JICA-ICT Survey Team
Mr. Hitohiro Sakurai	ICT Expert, JICA-ICT Survey Team
Mr. Hideaki Hiruta	Agriculture Extension Expert, JICA-ICT Survey Team
Mr. Kota Hirayama	Weather Index Insurance/Micro-Credit Expert, JICA-ICT Survey Team
Mr. Roel Briones	Consultant for Irrigation Water Mgt., JICA-ICT Survey Team
Ms. Geralyn Rigor	Consultant for Agriculture Dev't., JICA-ICT Survey Team
Ms. Karla Silayan	Consultant for ICT, JICA-ICT Survey Team
Mr. Jeremille Raton	Consultant for Weather Index Insurance, JICA-ICT Survey Team
Ms. Luz Brenda Balibrea	Desk Officer, DA-PDS

Ms. Teya Mendoza                      PDO, DA-PDS  
Mr. Edmer Abanto                      Admin Staff, DA-PDS

## 1. INTRODUCTION

The workshop started with an opening prayer by Mr. Roel Briones. Followed by opening remarks from Ms. Luz Brenda Balibrea, Desk Officer of PDS-DA. According to Ms. Balibrea, with the assistance of JICA, this survey is to respond to the current needs of the agriculture sector. With climate change, agriculture is the most damaged sector. And with the challenges of globalization, it is better to act on the right time with a good information system. Then Mr. Kobayashi from JICA expressed and hoped for a very fruitful meeting, to find some ideas in ICT use in agriculture. Since the field of ICT is very different from agriculture, with both ICT and agriculture very common in the rural areas, this effort is to merge both sectors. Then, Ms. GERALYN RIGOR introduced the participants of the workshop.

Following Mr. Akira Sudo's introduction on the concept and objectives of the survey, Mr. Sakurai then stated the current ICT situation in the Philippines.

## 2. MORNING SESSION: AGRICULTURE EXTENSION AND MARKETING SECTOR

The morning session officially started with Mr. Hiruta's presentation application of ICT on the Agriculture Extension and Marketing Sector. The first proposal is the improvement of marketing system for small farmers. Ms. Gera also added other participating agencies in the institutional arrangement on the proposed project.

BAS suggested looking into BAS for price collections, as production and marketing analysis services (PMAS) is ongoing nationwide. Member of farmers' cooperatives are the target of PMAS and are trained how to interpret market statistics (when to plant, what to plant and when to sell), and to monitor trading and market centers. Ms. Gera assured BAS that they will definitely look into the structure system being implemented by the said agency.

With the training of farmers brought up, AMAS explained that farmer trainings now will concentrate on the cooperative. With the Sariaya experience in e-trading as an example, there is a problem with the trader to farm system since the trader knows the cooperative could not serve a big order, thus manipulating market values. Farmer-cooperative relationships should be established. And with this, maybe from information sharing thru ICT, even not directly accessed by the farmer, the cooperative's knowledge of market information will be beneficial to both.

Ms. Gera added that this training is currently linked to an AMAS project to capacitate farmers and to strengthen good cooperatives. In Sariaya, Quezon, one of the conditions to become a member of the cooperative is that whatever the farmers produce, they will bring it to the cooperative. Pricing happens at actual trading level, not on farm level. Farmers then have no problem with cooperative trading, but issues are possible in the future.

DA also stated that one area that needs to be strengthened is micro-financing.

**ATTACHMENT-5**  
**MINUTES OF MEETING**

With regards to crop programming, AMAS explained that in PMAS, statistics are collected for pricing, and analysis of this statistics is being lectured to farmers. The farmers can then decide that when the market price is high at a certain point in the year, they can determine what to plant, when to plant and where to sell. BAS provides prices of commodities to trading centers nationwide.

JICA helped in formulating this AMAS project, but the addition of training center on agriculture technology and institution system in the cooperative is recognized now. JICA also recommended to reconsider target beneficiaries of the project and should focus on an integral part of the market system.

After JICA's recommendations, Ms. Gera instigated the second part of the proposal which will establish an information access and delivery system wherein farmers/traders can get price information and crop information. Digitizing of trading can also be done where paper transactions and duplications will be lessened. Access to records will then be digital instead of the usual paper retrieval.

AMAS added that the previous project was done in 2008 with sites identified at that time, but it can be changed to more suitable groups to pilot. This project should be more concerned on trader relationships, funding facilities and consider behavioural and cultural backgrounds of farmers. One approach to entice farmers to have more ties with the cooperative is to be more social, taking into consideration the increasing number of SMS and SNS users.

Mr. Hiruta then presented the second proposal on the Agricultural Extension which is the online marketing system development project.

After the second presentation, Mr. Kobayashi observed that aside from marketing, the proposal also includes information dissemination on agricultural technology. Ms. Gera agreed and explained regarding ATI's involvement because of their mandate with e-extension and to reach and capacitate farmers. With the inclusion of information dissemination, JICA suggested to change the name of the proposal.

AMAS made a clarification that the title and objective of the proposal seems to match. But to differentiate this project with the first one, information dissemination should be taken out and put into the first one. Other than capacitating the farmers, objective should be to improve capacity and production to get better income. And the infusion of ICT portion in the first proposal will be the information dissemination thru SMS/SNS. The second project will be different from the first by actual trading, wherein strengths and weaknesses of farmers on actual transactions will be identified.

The survey team is also looking into other options on ICT applications such as mobile money transactions with the limitation of access to banking services in the rural areas.

Ms. Nemi of AMAS also had the same opinion as Mr. Kobayashi, that this portion can be one of the components of the first presentation. In order to improve the marketing system of small farmers, e-trading can be integrated with the second proposal.

**ATTACHMENT-5**  
**MINUTES OF MEETING**

The first ICT system is more on market operations/market management, while the second one is the actual e-trading part and a smaller component of the first. DA also added that the title of the project is consistent with the objective of the first proposal, a slice of which is the data collection and information dissemination part. Trainings should be done on the first proposal, while the second is focused on online marketing system.

ITCAF informed the group that with regards to e-trading, they are planning to install IP cameras in trading centers where actual trading of different products can be viewed online. Ms. Gera also added that during their recent visit to Sariaya, they also noticed installed CCTV cameras in the market/trading center.

Many market systems are already existing but with different directions. Mr. Kobayashi suggested that it should be merged into a unified system. And with its implementation, a strong initiative and commitment of DA is required.

CLIMBS shared that in a production phase of an upland Barangay in Mindanao, instead of asking for farm-to-market roads, they asked for 4 horses to bring their produce to the national highway/road. They also considered the fact that FMRs can lead to loggers to penetrate their areas. This in case, farmers may be baffled by introducing new systems. Improving existing systems and simplifying them is then suggested.

The survey team responded that if it is not applicable to the said barangay, then they can look for other areas that need the said system. And that they'll make sure that everything will be made simpler with their approach to the farmer levels.

Mr. Hiruta suggested a unified portal site with strong initiative but Mr. Kobayashi said that household PC ownership in rural areas should be considered. Mr. Hiruta pointed out that the focus is not on individual farmers but on the farmers' cooperative.

DA reiterated that this project cannot address all concerns on the agricultural sector. Different areas have different problems, so to come up with a marketing system or improvement of marketing systems that can be replicated in other parts of the country, there should be a pilot area where this proposal can be implemented and serve as a model.

Ms. Nova of Smart Communications informed the group of their company's programs with ICT integration in entrepreneurship where they organized a farmers' community In Cagayan de Oro. They helped in forming the community's own cooperative and their main challenge was the introduction of ICT to farmers, with some of them experiencing for the first time holding a mobile phone. They didn't work with individual farmers, but with social entrepreneurs helping the cooperative. They helped to capacitate the cooperative and social entrepreneurs are tasked to introduce ICT integration in the community. There's also a community organizer, in cooperation with LGUs, church and church organizations, to help in values formation, sales and marketing and business development, and provide additional funds to help the cooperative. The said cooperative is now venturing into products and already looking at exporting their goods.

DA then stated that criteria should be set where this proposal can be done. They should focus and push people to the advanced phase.

**ATTACHMENT-5**  
**MINUTES OF MEETING**

AMAS added that the project shouldn't be constrained to using web applications. Instead, utilize SMS to complement the system. A pilot can be done for a small group and bring hope to farmers of other opportunities. Referring to the current ICT situation presentation, wherein the percentage of online shoppers in the rural area is greater compared to online shoppers in urban areas. Maybe this is because of the lack of opportunities or other avenues in selling, there is a future for internet based/online transactions in the rural areas.

Ms. Gera further discussed that with the online marketing system proposal, the web matching mechanism is only the beginning. Afterwards, farmers/traders can exchange information and they can contact each other through SMS and email.

Then the third proposal is presented which is on Pest and Disease Information System Development.

The focus for the third proposal is rice. There are several initiatives in providing trainings for integrated pest management. Also Philrice has FTC and ATI has FCC, wherein they receive reports, incidents and questions on pest and diseases. With this proposal, information will still be sent to the national level, but primarily sent to a local/provincial system. So if the local/provincial level has the capacity to solve the problem, it can be dealt with immediately.

PhilRice asked if maybe ICT can help them improve the text system or set a pre-diagnostic system procedure before the information reaches the expert. From the survey, although the most common communication means nowadays is by cellphone, messages sent thru text has its weaknesses, that is experts are having a hard time interpreting and analyzing the data. But maybe MMS integration in the current application can assist with their analysis and interpretation. This can also be done not only for pest and diseases but also on nutrient problem (nutrient manager).

Crop manager/nutrient manager is being developed by IRRI/PhilRice. This application can be accessed via web, through android phones or can also be stand alone program. This system presents a series of questions for the farmers, so in that way, they can provide advance analysis of what fertilizer can be used. Perhaps, a more interactive system can be developed. ASCENT (Amputee Screening via Cellphone Networking) is a similar system and was developed by Smart Communications where it acts as a pre-analysis tool for doctors to assess patients' conditions for consultation and prosthesis evaluation.

PhilRice also mentioned for the current pre-diagnostic technique to be enhanced so as to get more information for a more accurate and specific diagnostic and analysis. ATI agreed with Mr. Jovino's suggestion and assumed that in reality, not all farmers are using smart phones with different applications. All types of cell phones should be considered in developing such programs. Mr. Jovino added that MMS shouldn't be a priority but only an indicator. He then made an inquiry on the statistics of smart phone users versus legacy cellphone users. The team noted the said inquiry. Ms. Gera then explained that through SMS, farmers can send an incident report to provincial coordinators. Banking on the strong relationship between farmers and AEWs, and assuming these provincial coordinators have mms/java enabled mobile phones, they can then take the picture and gather other information. These data can then be sent to the local agriculturist or local expert for assessment on the problem.

Microensure expressed that while they laud the project, it is just a reaction to an occurrence of a risk and that risk medication using this concept should be looked into. He then cited that similarly, with the Department of Health during the dengue season, they provide an advisory on weather and temperature monitoring in an area. This information on change in weather can also be used by farmers, to adjust poultry temperature or presuppose infestation problems in the area, and consequently, they can schedule or plan when to plant or harvest.

With applications such as FCC, FTC and Smart's InfoBoard, push information can be sent to farmers/registered users; i.e. increase in rat infestation in a certain municipality. Farmers will be notified and with the received information, they can prepare or do preventive measures.

ATI had discussions with IRRI where they met people from Bangladesh and they've been using a similar tool that provides advisories on how to act on their pest and diseases. In relation to plain texting, they also developed a system wherein there's a database that answers farmers' queries and offers an initial diagnosis. Maybe, telecommunication companies can also help with the development of a comparable system.

The problem with the current system being used is that sometimes, calls or SMS exchanges become long because of the series of questions that need to be answered. Perhaps, common SMS conversation/discussion between farmers and experts can also support this dilemma.

To conclude the morning session, Mr. Sudo established that ICT should be the tool and not the objective of the study. An incentive may also be given to organizations that are to adapt the said projects.

### 3. AFTERNOON SESSION(1) : ICT IN THE IRRIGATION SECTOR

Mr. Sudo presented the proposal on the application of ICT in the Irrigation Sector.

With regards to the mobile money payment of ISFs, Smart advised the identification of a sari sari store that can play the role of bank. This particular store should be accredited by both Smart and Bangko Sentral ng Pilipinas, as it involves transactions similar to bank services. To be a smart money dealer, you have to have a certain amount of money all the time. It'll be less stringent than banks so transactions will be simpler. Clustering of farmers and percentage of mobile ownership should be also be identified. As suggested by Mr. Roel, since IAs already have bank accounts and are SEC registered, they can also be considered to become smart money centers. Smart still has to confirm the team about requirements on how to accredit sari sari stores or associations as money centers.

To become smart money users, farmers should have a smart SIM. Application to become registered users is done on the mobile phone and to acquire its supplementary card (can be used as an ATM card or debit card), there's a one-time registration fee payment; but can be waived upon agreement with Smart.

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Smart can also create a special SIM with a special menu, where the particular service fee to be paid is already included in the menu for easy access. Aside from this special SIM, there's also what they call a community SIM, where an administrator can access a web-based program for SMS blasts that can be used for announcements, advisories and information distribution. One of its advantages is that calls and texts from these community SIMs are discounted. Although IAs don't have their own computers and depend on NIA's facilities, they can use the field offices' computers.

In terms of profit, there's a 1.5% transaction fee, same concept as a credit card's service charge, but where to deduct the charge (farmer or IA/money center) can be discussed. Charges will be flexible; farmers can't be charged with the transaction and it's the organization that will subsidize the said cost. It can be shouldered by NIA or policy on ISF payment can be adjusted since using mobile transaction saves and offsets expenses. On NIA's part, there'll be no need for collectors to travel to the farmers' community to do the ISF collection. Smart also suggested that a cash incentive scheme can also be created for the IAs and farmers that adapt the said proposal.

Smart has already been helping with the implementation of microfinancing in selected communities, where they provide training modules for the stores. But for users, they rely heavily on the local people. There's an officer that goes back to the stores. Expense is on the continuous education, ICT training and reminders. In this case, Smart can train NIA staff. The NIA staff then will guide other members of the community on the said scheme.

One constraint though is that there's a limit in the amount of mobile money balance. The reason why it worked with sari sari stores is that transactions are done everyday and the amount for these transactions are small. Smart also advised that before shifting to electronic transactions, make sure that the manual is already efficient. In this case, manual collection is not really efficient in some areas. Transition will be very crucial, thus it has to be carefully studied.

Considering that farmers are negative to change, it is suggested to pilot in one area where farmers will have the option to manual or electronic payment. With regards to documents/receipts, all mobile transactions have verification and reference numbers. This transaction can also be viewed on the internet. In the current ISF payment procedure, payments are posted in the irrigation service fee register, an accountable form and the basis for audit. Receipts can be done by billing clerks as soon as payment is received.

Bills payment is only one aspect of this project. Smart sees the potential of the proposal and recommends a packaged system, both computer and mobile applications. And it doesn't matter if the community is small or big, what's important is an area/NIS to pilot, learn from it and then expand the system. Since it doesn't require any special equipment and will only utilize what is available on the community, NIA's only concern will be investing in people as trainers. Aside from irrigation officers, training of IA officers and farmers should also be done. JICA can then support the cost of training in the IA level, and Smart can subsidize manpower cost (trainers) and provide campaign materials. They'll also be developing the said program since it's a service that they provide but at the moment, they don't have a person to focus on the project. If this pushes through, it will have to be lined up with other projects. They also recommended for NIA to get a project officer that will report to Smart.

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And they'd also like to look at IA offices versus other establishments as potential mobile money center.

For NIA's side, this won't be too much of an additional investment. They only have to focus on training and regulate policy on ISF. Ms. Edita then reminded the group that this should all be done in accordance with RA 9184 or the procurement law. Smart cited an instance that they had a MOA with DepEd to install internet in schools wherein areas were divided with Smart and Globe. This situation may be possible, but it defeats NIA's purpose of data consolidation on a national level.

Farmers are very conservative and introduction new procedures can be deemed complicated. Based on Smart's experience in rural communities, upon the presentation of new technology, at first nobody uses it but after a while, it became a habit.

This idea/concept alone won't solve the problem on ISF collection and also cannot guarantee an increase in the ISF CE, but may contribute somehow, so it deserves proposing. Some people still doesn't use mobile phones hence a new system cannot assure all IAs to try it. NIA's other concerns were that not all field offices have cell sites, in some cases, very low signal and also nonexistence of internet connection in their area. Smart asked to be provided a list of these problem areas and informed the group on a device that strengthens cellphone signals. They also offer refurbished phones for as low as Php499 and provide farmer trainings on basic mobile phone use.

Now, the team's advocate is to talk to NIA office people regarding this proposal/improvement of facilities in the IA level and Smart vouched to provide the team details on how to become a smart money center, process of mobile money transactions and the issue with mobile network coverage.

The second proposal for the use of ICT in the Irrigation Sector is the speedy issuance of ISF bill by confirmation of planted and irrigated area using GPS.

Mr. Labiano confirmed the lengthy process of ISF bill issuance taking in the case of UPRIIS. Since it is a big system and bills are prepared and distributed manually, it actually takes a long time for the bills to reach the farmers. There are also instances that ISF payments aren't recorded in the ISF register.

This proposal also aims to increase accuracy on LIPA updating and computerized issuance of bills. This can speed up bill preparation, therefore resulting to prompt receipt of ISF bills. Training on the use of GPS can be provided for NIA and IA field staff. GPS is used to verify and validate data collected by water masters.

NIA then explained that there is actually no problem in the printing of bills. What actually slows down the process is the distribution. But if the previous proposal pushes though, by means of the special SIM/community SIM, advance notification of the billing can be sent thru SMS. Smart conveyed that this can also be further discussed in detail.



This proposal may not in fact expedite the current ISF billing process, but LIPA accuracy may be improved. With the conducted field survey, distortions on the map were revealed, therefore precision is questionable.

Due to lack of manpower, sometimes not all bills are delivered. But farmers still pay the ISF because of their trusting relationship with the collectors.

With the reinforcement of advance ISF bill notification, decrease in manpower time and cost is possible. This can also be considered as an application of NIA's RATPLAN goal for paperless communication.

#### 4. AFTERNOON SESSION(2): AGRICULTURAL INSURANCE AND MICRO-FINANCE

The afternoon session on Agricultural Insurance was started by Mr. Hirayama citing the current situation of crop insurance and some index based insurance projects or products develop and being pilot tested by different donor and multinational agencies through PCIC; as well as some initiatives of the private sector. After the presentation on what's necessary for further development and on the identified issues in each stage, an open forum and discussion is held.

First to break the discussion came from MicroEnsure which clarified some of the points presented by Mr. Hirayama in the previous slides and also, raised some issues with regards to the weather index based insurance they have developed and pilot tested. MicroEnsure, as explained by Mr. Martirez, pioneered WIBI in 2009 by designing and developing drought insurance and weather index – he claimed as first in the world. From then on, they were able to develop other index type insurance. Since 2009, they were able to cover 2,800 farmers in six cropping seasons where they are able to develop and see other basis risk from the original product to develop new product, which is the wet and dry index based insurance. From the concept of typhoon and drought, data or information is gathered by taking into consideration the GPS location of the farmer's farm and relate this to the path of the typhoon's distance to or from the farm, calculate the wind speed and payout based on the wind speed of the typhoon. This is supposedly a good model however if you applied this on crops, there are other basis risks to consider such as the resiliency of some crops, take for example some crops may fall with a 10mph windspeed, others may still stand at 100mph windspeed. Therefore, it may be a good model to correlate windspeed to other factors such as infrastructure where, take from example, correlate the strength or windspeed of typhoon that it will make house roofs fly or trees to be uprooted.

However, one big matter in the recent typhoon experiences which maybe attributed to the climate change is that it made typhoon slower in speed but longer in duration causing more flooding and other things. Thus, these factors must be considered in designing a typhoon based index insurance which may be specific per crop or type of peril whichever is applicable.

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Drought insurance, on the other hand, which is by definition, calculates a period of no water, let say, 45 days or up. A certain crop may be damaged even in less water in less than 45 days. Thus, there is a need to review this also as there are also new indicators such as dry spell or prolonged dry spell, considering some experiences in Africa.

Thus, in terms of the weather index based, the private sector not only Microensure, has pioneered in the development of this weather index with more than thousands of hectares insured for the past years, although done in pilot stage. However, there are new studies or pilots being done since last year by other players especially the PCIC.

The main issue being point at by Mr. Martirez is that with regards to weather index based insurance is how do we look at it whether it should fall under agriculture or catastrophic; which, is a major factor contributing to how we shall design WIBI and where the government's direction should be. For example, if WIBI is a crop-based insurance, then, for each crop, there should be an index citing different factors such as weather conditions, soil condition, yield, type or variety, etc. This is also true with trees and other agro-forestry products, which also, may be used to avail or earn carbon credits.

There is no issue in terms of what kind of assistance is being needed or what ICT tools shall be used for WIBI; the issue is more on policy direction and how the private sector can enter into this kind of insurance with the same level of playing field without sacrificing their viability and sustainability such as issues on tax insurance and other risk mitigating measures. WIBI, based on Mr. Martirez's opinion, should be both a catastrophic and agricultural in nature, whether you look at it as a poverty alleviation tool or a response for food security/sufficiency. This will pave way for the private sector to come in especially in agriculture, where no local insurance and reinsurance company in the Philippines can afford to cover all the risk in agricultural insurance and therefore, there is a need for the participation of the international reinsurance provided, that the product to be developed is acceptable to them; this is the challenge.

CLIMBS, then presented their experience citing that their WIBI product, in partnership with Munich Re, is different as they are targeting clients at the Meso Level, which are the cooperatives and not with individual farmers and persons. CLIMBS's weather insurance product is based only on three triggers --- yellow, orange and red; that depends on the occurrence of the catastrophe and the amount of rainfall. Yellow trigger considers a 10-year event, orange trigger considers a 15-year event, and red trigger considers a 20-year event. An example of a 20-year event is the recent typhoon Sendong and Ondoy. However, due to climate change, the occurrence of these events are much more frequent rather than following the 10-year, 15-year and 20-year events as triggers and thus, recent typhoon experiences is expected to happen again next year and maybe more destructive or severe.

In terms of payout, CLIMBS pay 5% for yellow trigger, 10% for orange trigger and 20% for red trigger based on the insured loan portfolio of a participating cooperative. The purpose of this insurance is not to indemnify but to bridge or to give a breathing space after a

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catastrophic event happens. According to their study, when a catastrophe strikes, cooperatives and their members are affected and therefore, they incur some loan arrears with either the cooperative or the creditors such as Landbank. Thus, this insurance product will somehow bridge or cover for that period to give them enough time to recover.

CLIMBS has a technical partner provided by Munich Re which is DHI (Danish Hydrological Institute), based in Singapore, that provides the data in 3-hour intervals based on satellite feedback; and can even, in fact, provide weather information at least 3 days before hitting the particular area. However, insurance can only take place before or more than 10 days before the occurrence of the said event; thus, if a cooperative insures their loan portfolio and an event happens in less than 10 days upon enrollment, that cooperative cannot make any claim. This is an “anti-selection” strategy in terms of their weather insurance product.

On the operational side, CLIMBS claims that as per their experience, the approach for any weather index based insurance must be at the Meso Level because as they claim, looking at the individual level is not feasible. Further, technology costs a lot; in fact, Munich Re pays DHI 100,000 dollars a month to get this weather information. A question is raised whether the government is willing to pay this much every month to get the information every 3 hours or even, on an hourly basis.

Meanwhile, in response to what Mr. Martirez said, CLIMBS affirmed that international re-insurance companies have high appetite for catastrophic insurance and in fact, disaster risk financing is one of the things being discussed in the international scene citing also Thailand’s recent experience on flooding which brings the Thailand government to have something like disaster financing pool.

Further, regulatory issues is much of the concern of the private sector wanting to enter into this type of insurance schemes. One of the issues raised to CLIMBS by the Insurance Commission specifically on their Weather Protect Insurance is that, it is 100% reinsured to Munich Re. However, the Insurance Commission would like CLIMBS to retain at least 5% of the risk, which is at this pilot stage, CLIMBS cannot yet provide. In fact, the Philippine National Reinsurance waived their right for a 10% reinsurance. Again, it was reiterated that no insurance company can absorb any risk for this type of insurance as there is still lacking of information or the accuracy of information is still in question.

In terms of literacy, government can play a lead role for the sector, including the LGU, who should also be educated in terms of weather-based insurance. CLIMBS mentioned its pilot partnership with the provincial government of Albay in partnership with Oxfam where their provincial budget is being insured with the Weather Protect. The issue here is, being a government entity, will the partnership be allowed by the Department of the Local Government.

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Further, CLIMBS also mentioned that Munich Re has met with the Landbank of the Philippines to discuss the possibilities of insuring its loan portfolio. Having a big aggregator will make this type of insurance cheaper

In terms of the technical side, CLIMBS said that they cannot extract weather data from local organizations like PAGASA that are readily available in terms of historical information such as data from DHI, which is location specific at the municipal level. Thus, satellite feeds are more accurate than the data gathered from weather stations, as claimed by CLIMBS.

However, for MicroEnsure, they have divided the country in 6,000 satellite zones covering 48km radius each. It is fortunate for MicroEnsure as they were funded by Bill Gates Foundation and thus, they have access to NASA satellite feedbacks. In fairness to PAGASA, the correlation with the satellite feedbacks from PAGASA's weather information is 80% which is high considering that other land-based data is only 70% correlation. Further, with the recent purchase of Doppler radars, it is hoped that accuracy on data correlation will better improve.

The issue with PAGASA is not the analysis of data per se but the availability of the weather stations so data can be interpolated better and more efficiently to provide real-time data which is basically, the most important factor in weather index based insurance. Initially, as Microensure confirms, there were only 96 weather stations when they started out with their weather index based insurance, but now, it is more than 1,000 weather stations all over the Philippines and that is a good indication that the government is paying attention to this and this is what both the insurance and reinsurance companies need.

Malayan, on the other hand, has initially started with MicroEnsure in terms pilot testing a weather index based insurance but is now pursuing a similar insurance product as CLIMBS being more flexible than what it has previously tested. This product is approved by the Insurance Commission and also, is reinsured with Munich Re. Malayan will target the rural banks, commercial banks and other microfinance NGOs and there is no overlap of market space as CLIMBS will pursue and focus its weather protect product for the cooperative sector.

Based on their experience with the weather index based insurance initially pilot tested with Micro Ensure, there were some limitations they have learned such as limitation on application and thus, there were always a need to reassign the triggers again. Further, there is a need to redo the underwriting process. Insuring the loan portfolio is more flexible and has more versatility in terms of market and not limited to agri sector such as microfinance institutions, lending companies or other portfolio such as savings or investments. Thus, this is what Malayan pursued being one of the more active private insurers who have shown interest in the weather index based insurance schemes.

In terms of reinsurance, Mr. Diaz also affirmed that there is a growing interest for international reinsurance companies and thus, Malayan kept its interest on radar.

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Unfortunately, the local reinsurance industry is not yet ready as a number of underwriters are not familiar with this type of insurance and thus, they rely solely with the inputs of the international reinsurers in terms of trigger calculations. Further, it is difficult to explain to principals or the shareholders for products that rely heavily externally and so this is a good opportunity to work with the government and thus, Malayan express their interest and support for the development of agricultural insurance and other weather index based type of insurance.

Much of the presentation done by Mr. Hirayama came from PCIC and thus, PCIC gave a brief input and update on their weather index insurance. Mr. Cajucom explains that weather index insurance has a high start-up cost and is location or product specific. Based on its pilot testing in Butuan, the triggers used is excessive rainfall; and this was breached, and thus, they pay out 54 farmers for a total amount of 955 thousand pesos.

But before a payout was made, a certification from PAGASA was required and thus, PAGASA mentioned the need for more manual weather stations to be installed to make this weather index based insurance successful as it provides more real and accurate data on the field. Around 70 AWS have been installed which are WMO standard and more are being installed with the goal of installing a station covering 25km. radius. PAGASA is looking for a possibility of assistance in terms of integrating the manual stations and the automatic weather stations.

CLIMBS, meanwhile relate an experience of a cooperative based in Mactan, Cebu where they have used the triggers set by DHI and Munich Re and did a payout based on the satellite feedback. However, it was not expected by the cooperative as that event did not affect them that much.

SMART has asked a question to the other participants why the private sectors are getting data from other sources and Microensure explains that they do so to correlate the information from the different sources due to the limited information available which can be acceptable for their reinsurance partners to insure and absorb the risk. Microensure mentioned that any information must be within WMO standards which is acceptable to all insurers and reinsurers nationwide.

SMART mentioned that they are presently working with DOST and PAGASA in installing telemetric rain gauges in their cellsites which is around 70 at the present, where data can be available on the web for public use through the use of sms, which could have so many applications. MicroEnsure lauds the initiatives of SMART and CLIMBS suggested that SMART could be an aggregator of weather information and where users can pay. SMART has an existing negotiations with an European company, MeteoMedia in providing weather information. PAGASA confirmed that what has been installed with SMART cellsites are within the WMO standards.

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After these discussions led by the private sector, Mr. Raton summarizes some of the key points raised especially on the issues on the regulations and limitations of weather index based insurance and asked the government representatives their reactions or inputs on this.

ACPC cited that based from the credit summit done August of last year, still the main issue of farmers is how to increase the coverage of PCIC and this weather index based is one of the topic discussions where they see an opportunity for farmer, aside of course, for additional capital infusion. However, there is a need to increase the capitalization of PCIC in order to respond to this.

Meanwhile, PhilCCAP, being newly formed project, coordinates with PCIC in terms of piloting a weather index based insurance based from the inputs and learnings initially experienced from its pilot testing with ILO and GIZ. They are focused on defining what is efficient and what is not so that the target beneficiaries of the product can appreciate its use and application. If there is a good succes rate in the next 4 years for PhilCCAP project, there would be an expansion considering that a large portion of available farm lands are not yet insured.

Some of the challenges in addressing social security issue and the social dimension of the disaster that happens is how to speed up the turnaround of the farmers so they can go back to farming at the right time with sufficient amount of funds for replanting. Private sector funds can come to speed up things so that private individuals and corporations who are just waiting can also properly respond. PhilCCAP hopes to have these inputs and hopefully when the right time comes, well funded private companies can come in and fill the funding gaps not only for economic reasons but also, as part of their social responsibility.

MicroEnsure reacted on the statement that the government has no enough money for the development of agriculture or that PCIC needs more capital infusions, which can be in fact sourced from different ways. One of which is through Agri-Agra Law wherein the banking sector is required to set aside 25% of their total loan portfolio for agriculture and agrarian reform but in actual practice, the utilization is less than 25% so let's say out of 2 trillion pesos loan portfolio of the banking sector, 500 billion pesos must be allocated for agriculture. Therefore, if the government will only review this law, there could be funds available for agricultural infrastructure and even for the installation of Automatic Weather Stations. However, government encourages non-compliance of the law because of the fact that penalty for non-compliance is only ½ of 1% and thus, banks, instead of relending to the agriculture sector which is considered high risk, just pays the penalty. But if the penalty is stiff, more banks will comply and there will be more funds for agriculture.

Another suggestion by MicroEnsure, which they advocate is taxation for agriculture, let say about 2% premium tax, which will go to agricultural development not in the form of subsidy. So let say from the 500 billion pesos loan portfolio and insurance of 5% is required, that is already a premium worth of 25 billion pesos a year. If you add 2% premium tax, that is around 2.5 billion pesos worth of available funds that you can use for agricultural

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development but not to subsidize any program that is not economically viable, let say to buy a macro insurance policy or other risk mitigating measures in different levels – macro, meso and micro level. In fact, there are other funds available in the government but is not being utilized properly.

Another issue raised by MicroEnsure is that some of the policies or programs of the government such as the Agricultural Guarantee Fund Pool does not encourage MFIs to lend out to the agricultural sector, it is more of an insurance for the MFIs rather than assistance to the farmers. Therefore, it is suggested that government, instead of throwing some available funds for subsidies and assistance, use these funds for economically viable products and services and let the loss mitigation and risk measures handled by the private sector. There is a need to review the existing laws and review the different government funds and realign these to respond to the increasing demands of the agricultural sector and especially, on agricultural insurance.

ACPC responded that Agri-Agra Law is now presently being more strongly enforced wherein there is now a limitation to the non-compliance clause. Further, in case of any penalty payments, PCIC will get a portion of this to add to its buffer funds. ACPC will look into its existing programs and review as was suggested by the MicroEnsure.

After a 15-minute break, the session has proceeded by summarizing all key points discussed and putting these on each stage. One of the major issue that needs to be addressed is on data availability and accessibility. PAGASA, being the sole authority, must be assisted in terms of integrating all information from its different weather stations, whether manual or automatic, so that these information be readily available for public use in real-time. Another is the policy direction towards the development of weather index based whether it should fall under the agriculture or considered as catastrophic which technically falls under the insurance commission. If it falls under agriculture, PCIC may take a lead role as an aggregator for the development weather index based on different crops while ACPC can be the central database of information of let say, registry of farmers or registry of different credit programs for future policy enhancements.

In terms of identifying target areas, profiling of farmers and target crop and index, most of what have been started are still in pilot stage. For MicroEnsure and Malayan, they are saying they are beyond the pilot stage and already ready for the scaling up. Likewise, CLIMBS is already ready for scaling up pending its negotiations with Munich Re and the Insurance Commission regarding its role and risk-sharing scheme.

In terms of marketing and insurance literacy, there were some suggestions that government should play a big role so as to avoid what is called reputational risk. MicroEnsure reiterated that in order for the weather index based insurance to be successful, one must approach the farmer directly and inform him of what the insurance product is all about --- the parameters, payout scheme, when to collect, how to claim, etc through different media tools such as primers, comics, tarpaulin or signages explain to them in their local dialect. If the government,

let say, the department of agriculture market agricultural insurance, it may be able to promote all other areas of services required by the farmers as compared to what will be promoted by the rural banks which is just limited to agricultural lending.

In terms of product designing experience, MicroEnsure reiterated that it actually depends on what type of weather index based product is being designed. If it is catastrophic in nature, not particularly agriculture, the private sector has more than 50 to 70 years of experience and maybe able to factor this in the development process, however, it still depends as experience from their pilot suggest that each location or geographical area has a different requirement as compared to others. In terms of agricultural product, let say for rice alone has more than 100 thousand varieties, it must be specific per type or per variety.

Therefore, the department of Agriculture must focus their goals in terms of developing weather index based insurance, specific on a per crop (high value), per season and per geographical area; and whether this is based on food security policies or food sufficiency or other policies of the government. In terms of crops, there are numerous Philippine studies and the only challenge is how to apply these studies in actual implementation. All of these must be taken into consideration so as when private sector would come in, there is confidence that weather index based products are viable and are good business proposition based on the definition and direction of the government which of the crops or undertakings are insurable or not. The government should tell its priorities and set its policy direction so that private sector can lead in the development of different weather index based insurance schemes.

After this summary, Mr. Hirayama presented the different ways and schemes how JICA can provide its assistance. He further elaborated some basic concepts of possible future projects related to weather index based insurance.

Under the presentation on Project for Meteorological Information Management System Development, the following issues, concerns and suggestions were raised and discussed, as follows:

- There were lot of initiatives from different government agencies such as the DA and DOST, from State Universities and Colleges, and from different private institutions, putting up local weather stations. What is needed is centralized these information and PAGASA, being the lead and authority on this matter, becomes the central database aggregator and certify these weather information to make these readily available for public use in real time.
- PAGASA, however, reiterated that weather stations from these different sources must be within WMO standards so they can accept and certify the information gathered. Further, data gathering time must be harmonized such as if data is collected every hour, all other weather stations must also be collected every hour. There is a need for harmonization and come up with a system where all data are



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inputted and can be accessed by different layers of users. Also, real time information can be accessed where triggers for weather index insurance can be validated; as long as standards are met.

- SMART mentioned that it has an on-going project working with various groups putting up a rain gauge, fabricated by a local university calibrated by the PAGASA team, in their cellsites. The information gathered from these weather stations can be accessed via the internet. SMART is willing to share its technical expertise, if needed, and collaborate with other organizations; only, as of the present, SMART is limited to devices co-located with their cellsites.
- No issues with harmonization of data as long as instruments used are WMO standards and calibrated by PAGASA so that the public will have confidence on weather information.
- PAGASA is requesting that maybe through this project, a major component of their harmonization requirements can be met by developing PAGASA's Unified Meteorological Information System.
- There was a clarification made by PAGASA that they already have a plan to place the information on the web to make it real time, however, as of the meantime, it's not yet integrated.

Under the presentation on Project for Weather Index Based Insurance Development, the following issues, concerns and suggestions were raised and discussed, as follows:

- A question was raised by MicroEnsure asking where does the private companies come in citing 3 major functions of insurance --- one who takes the risks, another who process or underwrites the risks and third who distributes and markets the insurance product. In terms of risk taking, there are two, the insurance companies and their reinsurers.
- JICA can assist looking into possibility of developing micro catastrophic weather index pool in support of developing a weather index based on a macro or meso level, capacitating the small players or stakeholders in this whole scheme.
- In terms of scaling up, there is a suggestion to also look into the possibility developing index insurance not only for new target area or new target crops but also, for new target aggregators who are willing to share the risks; thus, there is a need to develop a pool of insurers to aggregate the risks. Further, there was a fund being suggested under the Climate Change Commission as the People's Support Fund amounting to 1 billion pesos that can also be used if suggested, to support this aggregation of insurers.

**ATTACHMENT-5**  
**MINUTES OF MEETING**

- Issue on PCIC charter was raised by CLIMBS wherein if PCIC will develop the product and they will distribute the product, they will assume some of the risks and therefore, needs the approval of the Insurance Commission. Regulation is one issue where the private sector needs to address because the lack of capacity of the local insurance companies will compel them to reinsure 100% to foreign reinsurance companies but the regulation will not allow it and thus, there is a need for a relaxation of the law until the local companies have the full capacity and capability to absorb the risks unless there is a government intervention such as funding support for the absorption of risks.
- PCIC presented their Public-Private Partnership concept and confirms that it has a separate charter and there are pending bills in Congress increasing its capitalization and widening its scope of services, strengthening its charter to provide insurance and thus, PCIC can play as an aggregator as there are no other private insurance companies for crop insurance. PCIC has made some recommendations where PCIC can do the product development for weather index based insurance which is very costly if done by individual companies; while the private sector can do the selling or distribution of the products to the target market.
- PCIC has also a need to amend its charter as weather index based insurance products are not indemnity based and thus, there is a need for new regulations. Further, PCIC can act as the local reinsurer for this type of insurance product as it has the capacity and capability to do this function as it enjoys some incentives such as premium subsidy and tax incentives that can be extended to private sector. PCIC has no regulatory functions, however, it also follows the Insurance Commission's rules and guidelines for its non-crop based insurance.
- Private sector, being regulated by the Insurance Commission, needs the approval before entering into any partnership arrangements with PCIC especially if there are some risks-sharing schemes involved in the product design.
- Malayan, on the other hand, sees issue on taxation as one major challenge especially on the 2<sup>nd</sup> approach or methodology of the project. Being a product distributor, they will be charged about 27% tax premium, which will add up to the cost. Therefore, it is suggested to look into the 1<sup>st</sup> and 3<sup>rd</sup> approach instead as a way to implement the project in terms of the relationship of all stakeholders.
- MicroEnsure, reiterated that if the design of the product is based on the assumption that there is a government subsidy, then the rate may not be enough to cover for reinsurance. There must be a paradigm shift within PCIC whenever it designs a product to include all other costs to make it sustainable. Further, this will also entice private sector to join in as there is an assurance of rate of returns.

With regards to the study for application of weather index insurance targeting the poor people, this is applicable for private entities in partnership with a Japanese private company, another possibility for collaboration for private sector such as MicroEnsure, CLIMBS and Malayan. This is a new program of JICA which is on a proposal basis only and not limited to insurance. The Japanese company submits proposal to JICA and to choose local partners. However, with JICA's limited budget, it cannot accept proposal from all companies and will just do the selection, as explained by Mr. Sudo.

With regards to the development of Information System in PCIC, which may also be applicable to other organizations as well. PCIC appreciates this initiative and will help them facilitate more efficiently the processing or underwriting which will pave way for paying out the farmers right after adjustment on the field.

In terms of the initiatives of the private sector, MicroEnsure mentioned different schemes such as using SMS for financial literacy, enrollment, processes and monitoring. GPS covering longitude and latitude is needed as mentioned by MicroEnsure and SMART mentioned that it is now readily available on smart phones, free.

## 5. SUMMARY

After the session, a summary of discussions on other topics were presented on Agriculture Extension and Irrigation Sector, for the participants for Agricultural Insurance and Micro-Finance who did not attend these sessions (Discussion on Agricultural Extension held in the morning, and discussion on Irrigation held in other room).

**Attachment-6 Pictorial Record**

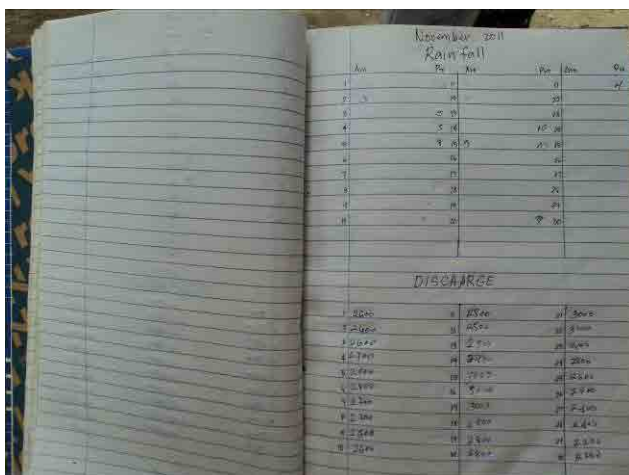
# PICTRIAL RECORD



Rice plantation at Porac-Gumain NIS. While planting started in the farm lot at the back, no planting is made in front. Non-observation of agreed cropping calendar makes water management difficult.



Gatekeeper at AMRIS (left). He is in charge of ISF collection from more than 300 farmers. Collection works require lot of time as well as transportation cost by motorcycle.



Record on rainfall amount (above) and water level (below). Recording works are made by gatekeepers near the facilities without equipment but by estimation from their own experiences.



TSAG Leader shows his mobile phone at Porac-Gumain NIS. Most of TSAG Leaders have mobile phones, however they share phones with their family members.



Computerized Billing and Collection System (CBCS) by NIA-MID. The system started its operation from 2010, and presently distributed to many NIS nationwide with trainings.



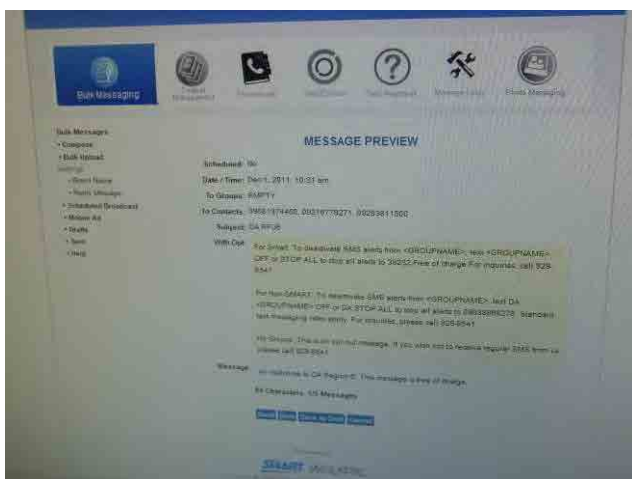
Parcellary maps in Porac-Gumain NIS made in the middle of 1980's. It requires updating but not yet made due to its huge cost required.



Land use map made by the Region-6 Office of BSWM. Mapping works are made by hand in Regional Office, and send to Central Office for digitizing process.



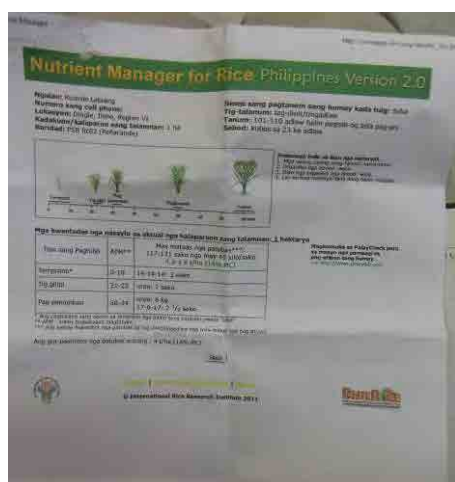
Radio Program being broadcasted by DA-RFU 6. The programs are set for 30 minutes from 4:00AM every morning. These radio programs are good information sources for farmers.



Web interface on the management of text messages at Farmers Contact Center (FCC) of DA-RFU 6. Access from Regional Office is limited to text messages only.



At the FITS Center in Munoz, many certificates are displayed on which Agricultural Field Workers are awarded by finishing on-line course offered by PhilRice.



Standard fertilizer dosage table printed from CD provided by NM-Rice. During promotion period, standard was provided in paper from NM-Rice Office by the information obtained during workshops with farmers.



Farmers in Jingle Municipality who shifted mobile phone company to use NM-Rice. For the attractive programs, sometime farmers change mobile phone company.



“Agri Van” of DA for the use of agricultural extension. Equipped with Audio-Visual equipments inside, this van has been in use for more than 20 years.



“Mobile Internet Bus” of PhilRice. The bus is originated from mini-bus provided by the Government of Japan and used for the promotion and training on basic computer operation in farm level.



Trainings for NIA staff on the use of handheld GPS at NIA Central Office. GPS is expected to be used for the updating of Percellary Map.



Inside Data Center of DA-ITCAF. In this server, various sources of AFMIS, data warehouse and website of Regional Offices are installed.



Plotter procured for the UEGIS Project. By this plotter, various maps with GIS information can be printed.



Mobile phone actually used by farmers for NMRice Mobile. Simple and not expensive, these phones are widely used by farmers.



Turn-out on the lateral canal of Porac-Gumain NIS. Maintenance works are made by IA farmers to keep its function.



Field discussion during the 2nd visit to Porac-Gumain NIS. The discussion was made on the topics such as water management and ISF collection.



IA Office at Division-3 of UPRRIS. Some of IAs have their own offices, with small shops attached for their income generation.



Questionnaire survey made on farmers at UPRRIS. The survey was for the information on ICT literacy in farm level, such as possession of mobile phone, usage and knowledge on internet, etc.



Group discussion with IA and TSAG Leaders at Rinconada Integrated NIS in Camarines Sur, Region-5. Issues on the IMT and ISF collection were discussed.



Interviews with farmer at Rinconada Integrated NIS. Most of farmers replied that they have mobile phones, however not exclusively used by himself but shared with family members.





Rice dryer installed by DA for Rinconada Integrated NIS in Camarines Sur, Region-5. Drying fee is collected from users and becomes income source of Irrigators Association.



Issuing process of ISF bills at Rinconada NIS Office. Though calculation of ISF amount is computerized, huge workload, time and cost are required for printing, confirmation for signature and delivery to farmers.



Office of Mactan Multi-Purpose Cooperative in Cebu, Region-7, covered by the weather index Type Insurance by CLIMBS. Received Pay-out by reaching the trigger "Red" due to heavy rainfall in September 2011.



Farmer in Ormoc, Leyte Province, Region-7 who purchased ARBY Insurance from PCIC. Received pay-out upon reaching trigger, which was set on the average yield in the area.



Workshop on JICA-ICT Survey titled "Project Formulation Workshop for ICT Application in Agriculture" held on January 30, 2012, with many participants not only from Government but also from private sector.



Same as left. After the general discussion, small workshops for three (3) subjects were held for 1)Agriculture, 2)Irrigation and 3)Agricultural insurance